

CLAIMS

1. An ink-jet printing system, comprising:
 - (a) a substrate;
 - 5 (b) a visible ink-jet ink composition configured to be ink-jetted onto at least a portion of the substrate to form a first visible image on the substrate;
 - (c) a first invisible composition configured to be ink-jetted onto at least a portion of the substrate to form an invisible image on the substrate, said invisible image being associated with the first visible image; and
 - 10 (d) a second invisible composition configured for over-striking at least a portion of the invisible image, wherein the first and second invisible compositions are further configured to react and form a second visible image on the substrate.
- 15 2. The system of claim 1, wherein one of the first and second invisible compositions is an invisible ink, and the other is a developer, said developer being configured for developing the invisible ink to form the second visible image.
- 20 3. The system of claim 2, wherein the first invisible composition comprises the developer, and the second invisible composition comprises the invisible ink.
- 25 4. The system of claim 2, wherein the first invisible composition comprises the invisible ink, and the second invisible composition comprises the developer.
- 30 5. The system of claim 2, wherein the first visible image is a character, and the second visible image is selected from the group consisting of a highlight, an underline, and combinations thereof.

6. The system of claim 2, further comprising a third invisible composition configured for over-striking at least a portion of the second visible image, wherein the third composition and the over-stricken portion of the second visible image are further configured to react and become colorless.

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7. The system of claim 2, wherein the second visible image is a color within the visible spectrum.

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8. The system of claim 2, wherein the second visible image is fluorescent.

9. The system of claim 2, wherein the invisible ink comprises a developable colorant selected from the group consisting of phenolphthalein, o-cresolphthalein, thymolphthalein, p-nitrophenol, and combinations thereof.

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10. The system of claim 9, wherein the developer includes an active ingredient selected from the group consisting of alkaline earth hydroxides, rare earth hydroxides, transition metal hydroxides, alkyl amines, alkanol amines, polyamines, and combinations thereof.

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11. A method of ink-jet printing, comprising:

(a) ink-jetting a visible ink-jet ink composition onto at least a portion of a substrate to form a first visible image on the substrate;

(b) ink-jetting a first invisible composition onto at least a portion of the substrate to form an invisible image on the substrate, said invisible image being associated with the first visible image; and

(c) over-striking at least a portion of the invisible image with a second invisible composition causing the first and second invisible compositions to react and form a second visible image on the substrate.

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12. The method of claim 11, wherein one of the first and second invisible compositions is an invisible ink, and the other is a developer, wherein upon

over-striking, said developer develops the invisible ink to form the second visible image.

13. The method of claim 12, wherein the first invisible composition
5 comprises the developer, and the second invisible composition comprises the invisible ink.

14. The method of claim 12, wherein the first invisible composition
comprises the invisible ink, and the second invisible composition comprises the
10 developer.

15. The method of claim 12, wherein the first visible image is a character, and the second visible image is selected from the group consisting of a highlight, an underline, and combinations thereof.

16. The method of claim 12, further comprising the step of over-striking at least a portion of the second visible image with a third invisible composition, wherein the over-stricken portion of the second visible image becomes colorless.

20 17. The method of claim 12, wherein the second visible image is a color within the visible spectrum.

25 18. The method of claim 12, wherein the second visible image is fluorescent.

19. The method of claim 12, wherein the invisible ink comprises a developable colorant selected from the group consisting of phenolphthalein, o-cresolphthalein, thymolphthalein, p-nitrophenol, and combinations thereof.

30 20. The method of claim 19, wherein the developer includes an active ingredient selected from the group consisting of alkaline earth hydroxides, rare

earth hydroxides, transition metal hydroxides, alkyl amines, alkanol amines, polyamines, and combinations thereof.

21. An ink-jet printing system, comprising:

- 5 (a) a substrate;
- (b) a visible ink-jet ink composition configured to be ink-jetted onto at least a portion of the substrate to form a first visible image on the substrate, wherein the first visible image is a character;
- 10 (c) a first invisible composition configured to be ink-jetted onto at least a portion of the substrate to form an invisible image on the substrate, said invisible image being associated with the first visible image; and
- 15 (d) a second invisible composition configured for over-striking at least a portion of the invisible image, wherein one of the first and second invisible compositions is an invisible ink, and the other is a developer, said developer being configured for developing the invisible ink to form a second visible image on the substrate, wherein the second visible image is selected from the group consisting of a highlight, an underline, and combinations thereof.

22. The system of claim 21, further comprising a third invisible composition configured for over-striking at least a portion of the second visible image, wherein the third composition and the over-stricken portion of the second visible image are further configured to react and become colorless.